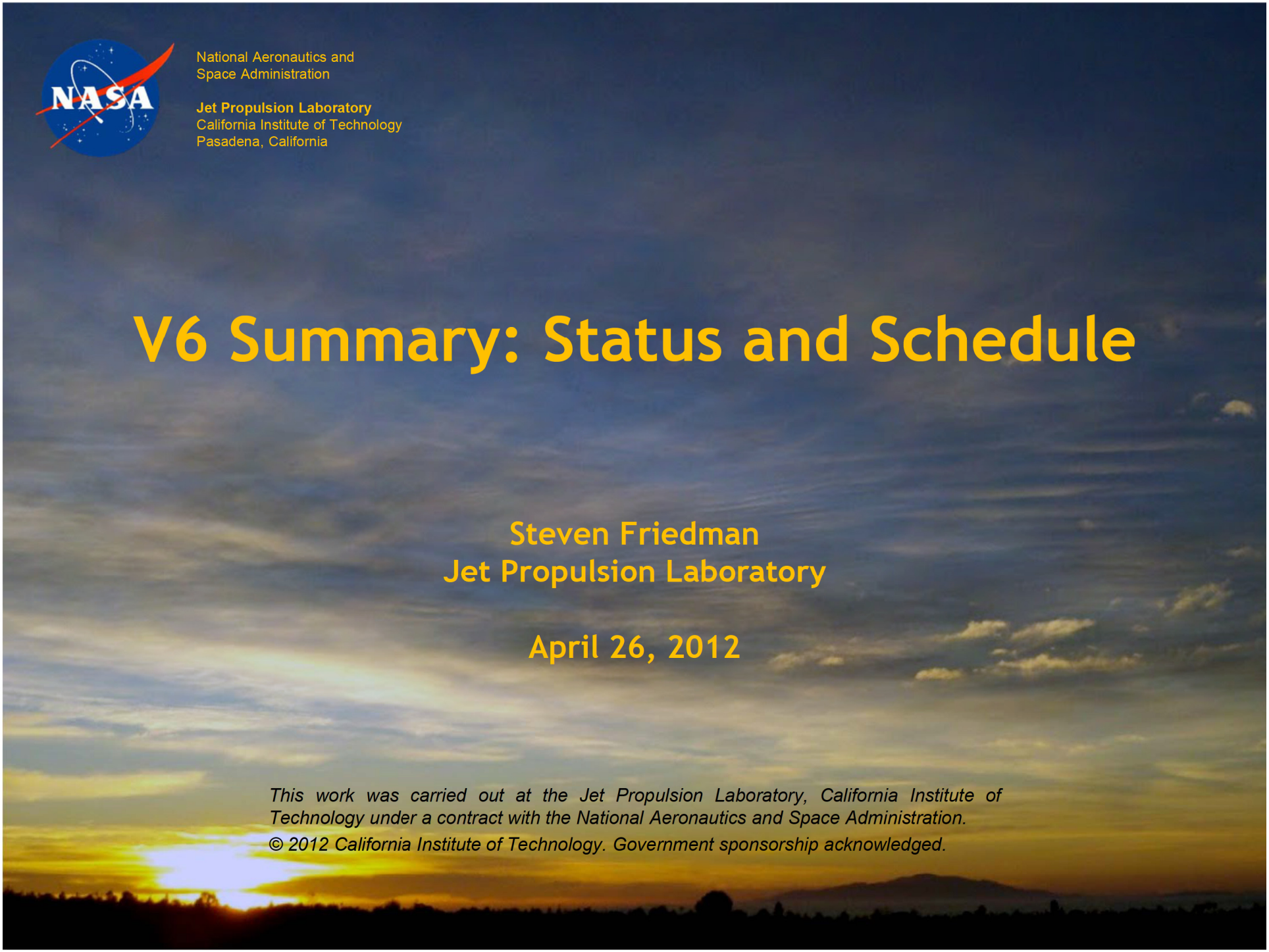

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V6 Summary: Status and Schedule

Steven Friedman
Jet Propulsion Laboratory

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This work was carried out at the Jet Propulsion Laboratory, California Institute of Technology under a contract with the National Aeronautics and Space Administration.

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Discussion Topics

- **A word about AMSU-A Channel 5 and L2 Products**
- **V6 Product Development Status**
- **Detailed Review of Level 2**
- **Other PGEs for V6**
- **Plans for Completing V6**
  - Closure of issues, PGE and product release
  - Schedule

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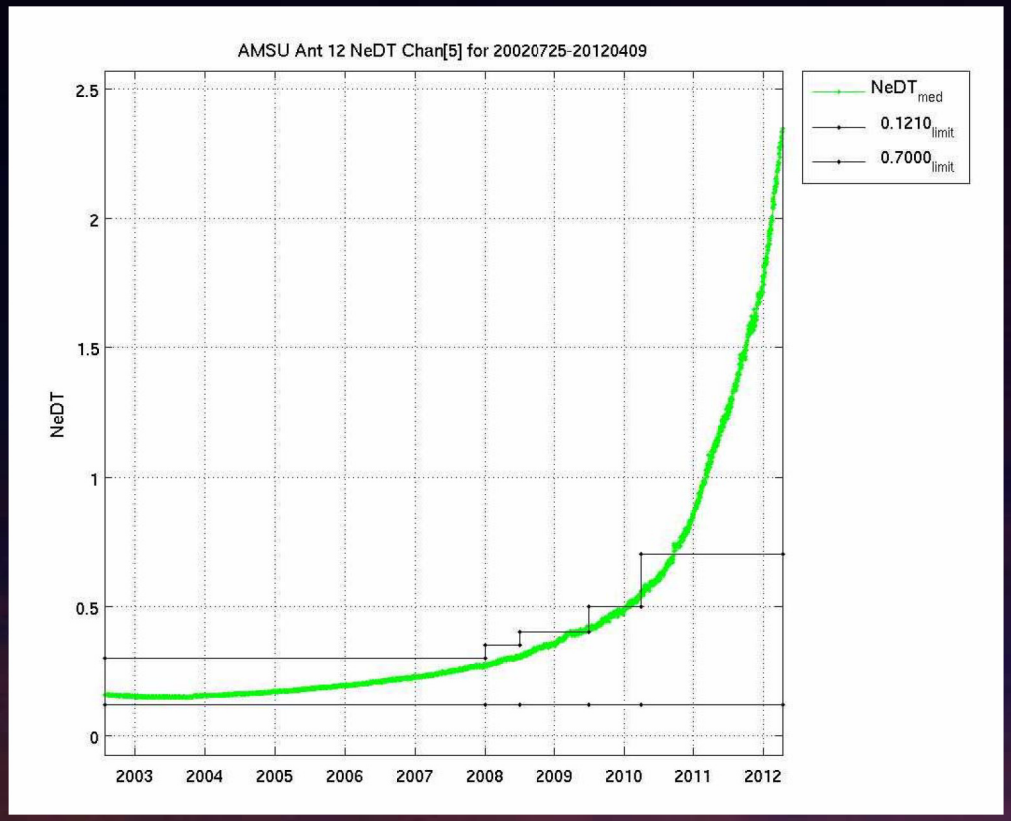
AMSU-A Channel 5 NEΔT



- AMUS-A Channel 5 began to fail sometime during 2008
- Quality of Channel 5 began to rapidly fail in 2010 and NEΔT exceeded 1.0°K in early 2011

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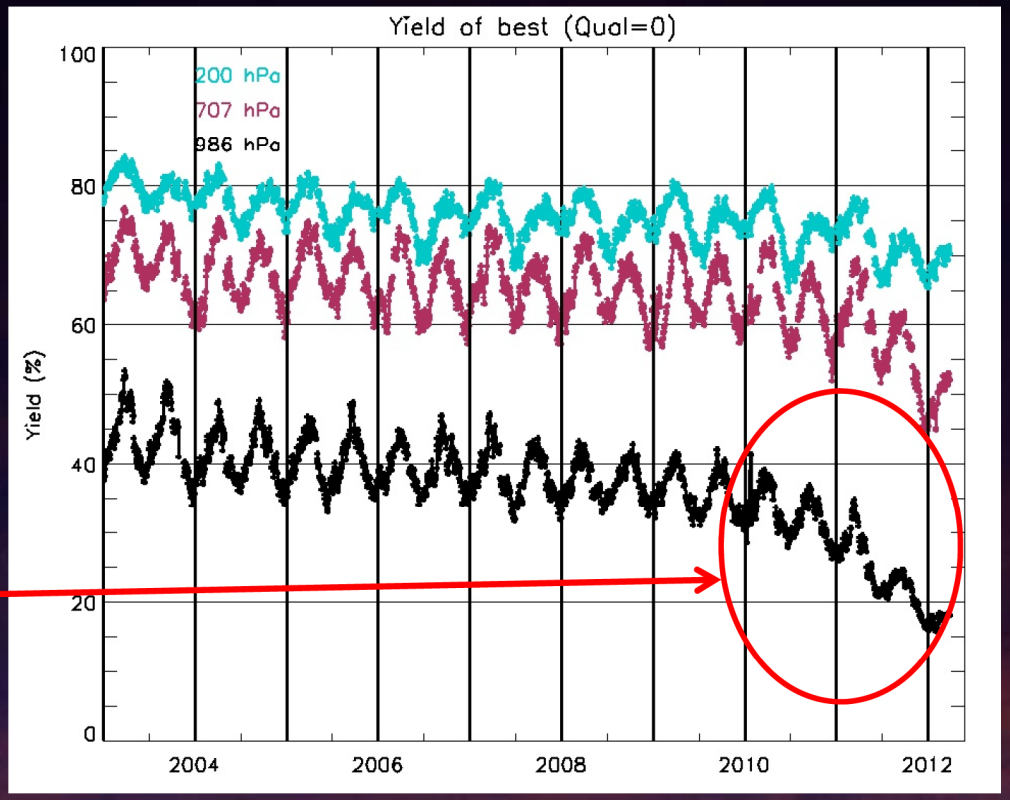
Version 5 is Past It's Prime!

- **Continuing degradation of AMSU-A Channel 5 has resulted in a significant drop-off Level 2 retrieval yields**
- **Fall-off is greatest near the surface**



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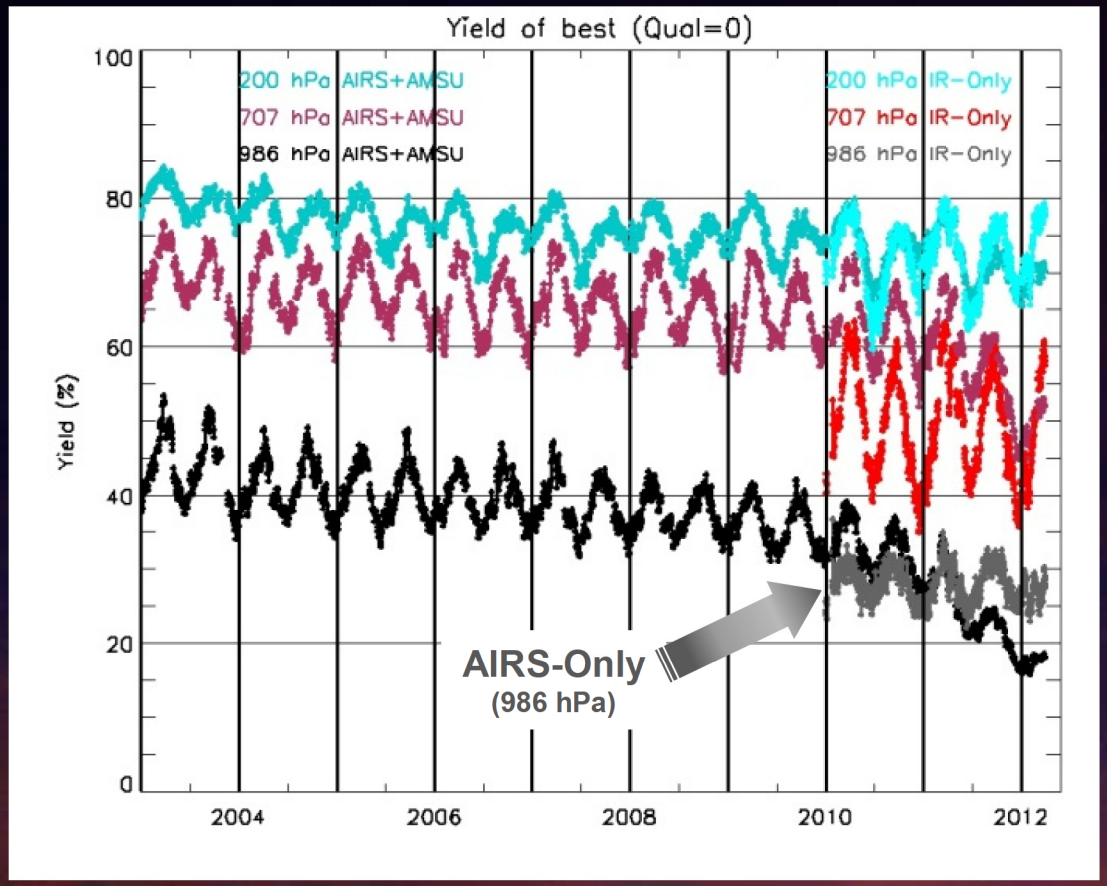
Version 5 is Past It's Prime!



- Higher yields with AIRS-Only retrievals!
- However, AIRS-Only QC not rigorously engineered for V5
- We need of V6 now!

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AIRS Software Development Activities - Development Status

- **Version 6 development began on 2007-07-11 w/ V5.1.0.0**
  - More than 66 builds, 6 since last Science Team
  - Several test cycles, last one just before this ST Meeting
  - Current V6 development version is V6.0.3.0 (V6 test version has been V6.0.2.0)

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V6 Product Development Status

- **Current Status**
  - L1B* – no changes planned
  - L2 – nearly complete (release soon)
  - L3 – under development (release beta with L2)
  - Calibration Subset – deferring development until L2 done
  - Climate Subset – deferring development until L2 done
  - CO2 – under development
- **Given schedule and resource limitations, V6 deliveries to the GES DISC will be staged.**
  - L2 to be released mid-2012
  - L3 and other products released late-2012
  - CO2 – probable late 2012 update

*** Gain table uploaded to AIRS Instrument on January 21. Will necessitate delivery of new L1B Channel Properties to GES DISC and reprocessing of L1B since then.**

Level 2 Development Status

- **Changes Since November 2011 Science Team:**
  - Improved QC throughout L2 product set
  - Added L3 Research Product
  - Added new “level quantities”
  - CO first-guess retrieval update
  - Cirrus retrieval update
  - Update to SDT Toolkit (V5.2.18) and work-around to bug with processing ephemeris data

Level 2 Development Status

- **Work still remains, but the list of known issues is growing shorter:**
  - Final Re-leveling updates (layer quantities to levels quantities)
  - Smaller technical issues w/ respect to L2 products
    - Methane – a fringe issue
    - Convection parameters
    - Final QC and re-leveling, plus unforeseen problems
  - Testing
    - We must complete checkout of all final code insertions
  - Documentation
    - L2 User Guide
    - L2 Test Report (largely incorporated in guide)
    - File Specification Document

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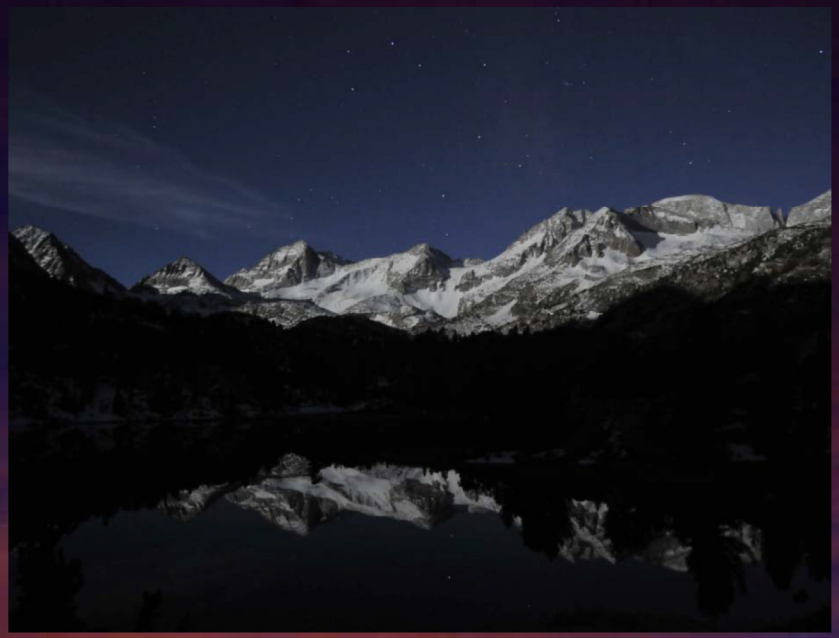
The Final Statement of V6 L2

- **Final Delivery Considerations:**
  - For L2, we are now in the V6 wrap-up phase!
  - There is no more time to try *new* things
  - Not all desired features may make it into V6



putting V6 L2 to bed

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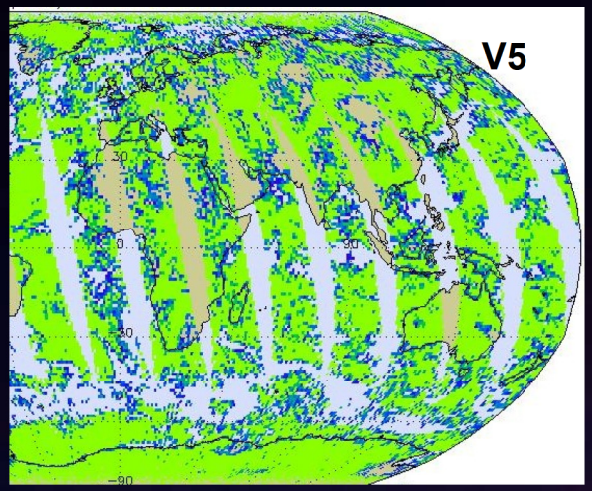
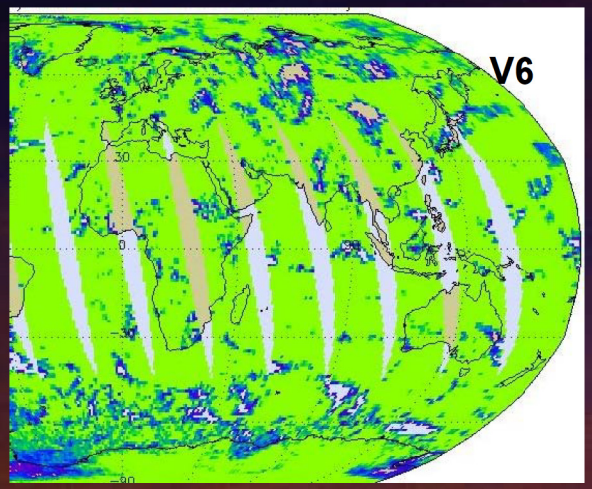
Significant V6 Improvements…
when compared to V5



Near-surface yield Improvements



- Level 2
  - Improved yields near surface
  - Reduced trends over time in many products
  - Modified retrieval not to use AMSU-04 and AMSU-05, and to gracefully handle future AMSU channel degradation issues
  - Improved AIRS-Only retrievals
  - Improved yield for both climate studies and numerical weather forecasts
- AIRS Level 3
  - Added new L3 quantities
  - Added TqJoint Grids to L3 STD product
  - Restructured L3 and added Research Product
- Level 1B (code unchanged)
  - Channel Properties update must be delivered (table update only)

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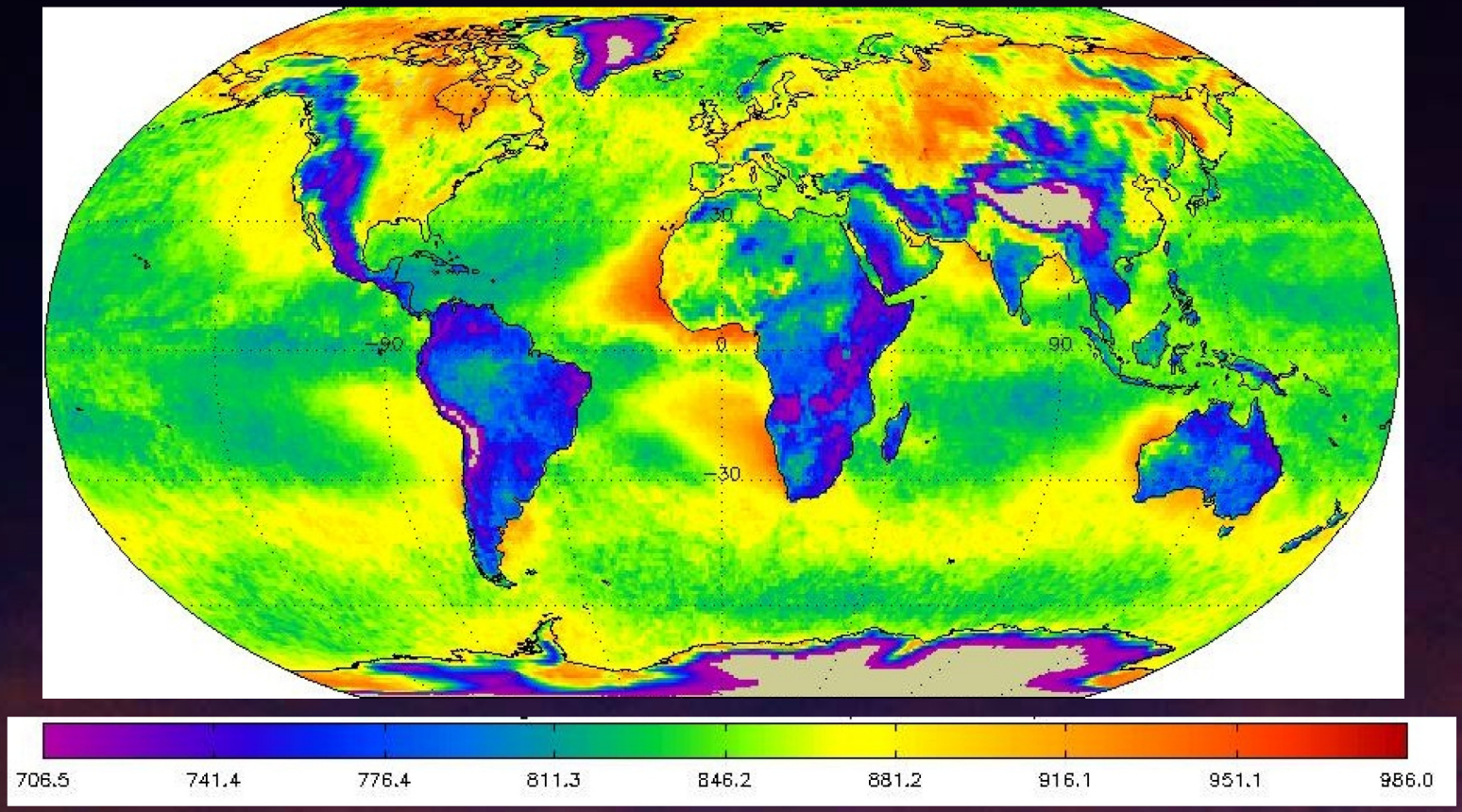
AIRS Software Development Activities - Level 3 Development Status



New Level 3 Support field: Boundary Layer Top Pressure (Daytime Image)

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Level 2 Testing
Extensive Test Evaluation Set Provided

- **Focus Days - 12 focus days requested by various team members**
  - AIRS+AMSU & IR-only
- **Radiosonde Matchups for entire mission**
  - Dedicated and PREPQC
  - AIRS+AMSU & IR-only
- **Trend test set: Nadir "1/3 swath," every day of Jan & Jul, every year of the mission**
  - AIRS+AMSU
- **Repeated Seasons: Jan, Apr, Jul, Oct for 2003, 2007, 2011**
  - AIRS + AMSU
  - AIRS-Only
  - (currently in process)
- **Special campaigns:**
  - Global AIRS+AMSU May 8-15, 2004 for Juying Warner
  - Jan 2008/2010, Feb 2008/2010 30-90 South latitude for Brian Kahn
  - North America for various days for Van Dang/Bjorn Lambrigtsen

We have two new processors, and we make full-use of them. Our processing power now enables us to run a month of standard L2 data (w/o cirrus) in about 2 to 2.5 days!

What about the rest of V6?

V6 Level 1C Status

- **No significant changes in direction since last Science Team**
- **Level 1C possible release for V6**
  - Level 1C products will not be produced at the GES DISC
  - We will publish algorithm for L1C calculations
  - May need to address additional issues… probably in V7
    - radiometric discrepancy between detectors
    - maybe Cij
  - Hand-off to NOAA to support creation of new BUFR product?

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V6 Calibration Subset
V6 Climate Subset

- **V6 Calibration Subset**
  - Will be very similar to V5
  - Basic algorithm unchanged, but rules have been tweaked
- **V6 Climate Subset**
  - NEW product based on Calibration Subset product
  - Is derived from L1B and L2 products
- **Both "subset" products are still under development**
  – *development deferred until after release of L2*
- **AIRS Calibration Subset and Climate Subset may be modified to be compatible with corresponding Sounder PEATE products for IASI and CrIS**

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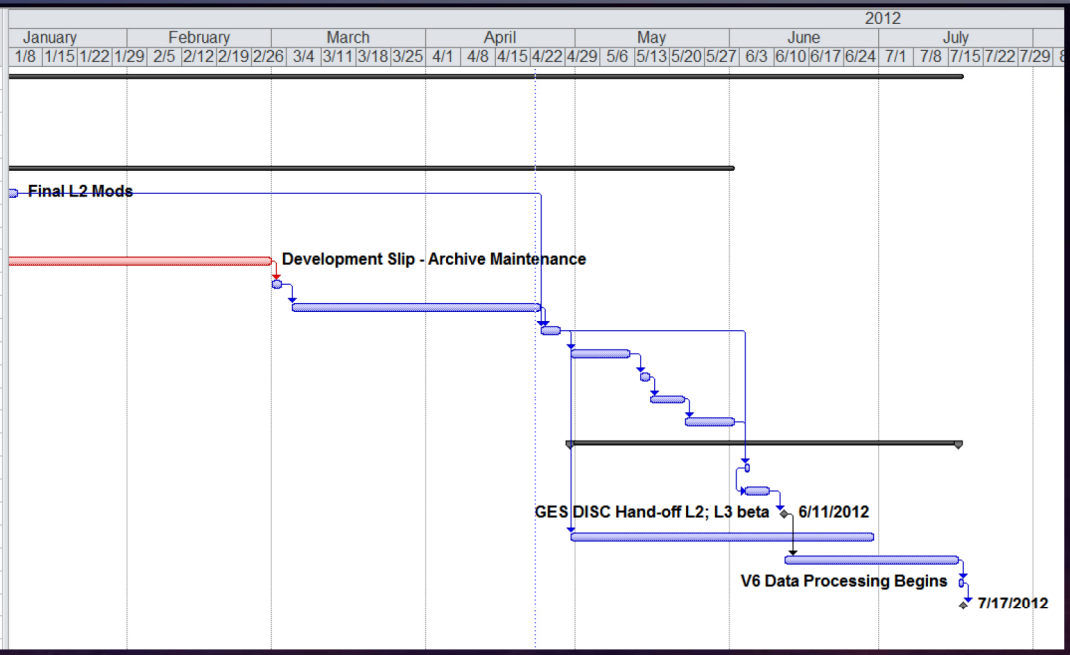
V6 Schedule - Level 2

	Task Name	Start	Finish
1	**Final V6 L2 Development and Checkc**	**Mon 7/11/11**	**Tue 7/17/12**
2	**L2 Development**	**Mon 7/11/11**	**Fri 11/4/11**
3	Code and Test	Mon 7/11/11	Fri 11/4/11
4	Science Team Meeting	Tue 11/8/11	Fri 11/11/11
5	Final L2 Development	Mon 11/14/11	Fri 6/1/12
6	Final L2 Mods	Mon 11/14/11	Mon 1/9/12
7	Net Meeting to Assess L2 Status	Thu 12/8/11	Thu 12/8/11
8	AIRS TLSCF DOWN - MAINT	Thu 12/8/11	Fri 12/30/11
9	**Extended Development (Maint Sli**	**Tue 1/3/12**	**Wed 2/29/12**
10	Build and PGE Verify	Thu 3/1/12	Fri 3/2/12
11	Test Data Production (head start)	Mon 3/5/12	Mon 4/23/12
12	AIRS Science Team	Tue 4/24/12	Fri 4/27/12
13	Final V6 Updates	Mon 4/30/12	Fri 5/11/12
14	Build, PGE Verify	Mon 5/14/12	Tue 5/15/12
15	Final Test Data Production	Wed 5/16/12	Tue 5/22/12
16	Final L2 Evaluation	Wed 5/23/12	Fri 6/1/12
17	**Package and Deliver - L2 & L3Beta**	**Mon 4/30/12**	**Mon 7/16/12**
18	Delivery Readiness Review	Mon 6/4/12	Mon 6/4/12
19	Build, Deliver, Checkout at GSFC	Mon 6/4/12	Fri 6/8/12
20	Hand-off to GES DISC	Mon 6/11/12	Mon 6/11/12
21	Documentation - all testing	Mon 4/30/12	Fri 6/29/12
22	**GES DISC I&T**	**Tue 6/12/12**	**Mon 7/16/12**
23	V6 Data Processing Begins	Tue 7/17/12	Tue 7/17/12
24	L2 V6 Product Support Begins	Tue 7/17/12	Tue 7/17/12



- **End Development** 5/11/12
- **End Test** 6/1/12
- **Deliver to GES DISC** 6/4/12
- **Hand-off to GES DISC** 6/11/12
- **GES DISC I&T** 7/17/12
- **Public Release** 7/17/12

AIRS TLSCF was down for data archive maintenance 12/7/11 to 2/29/12, far longer than anticipated, resulting in delayed completion of V6 L2 and pre-delivery testing.

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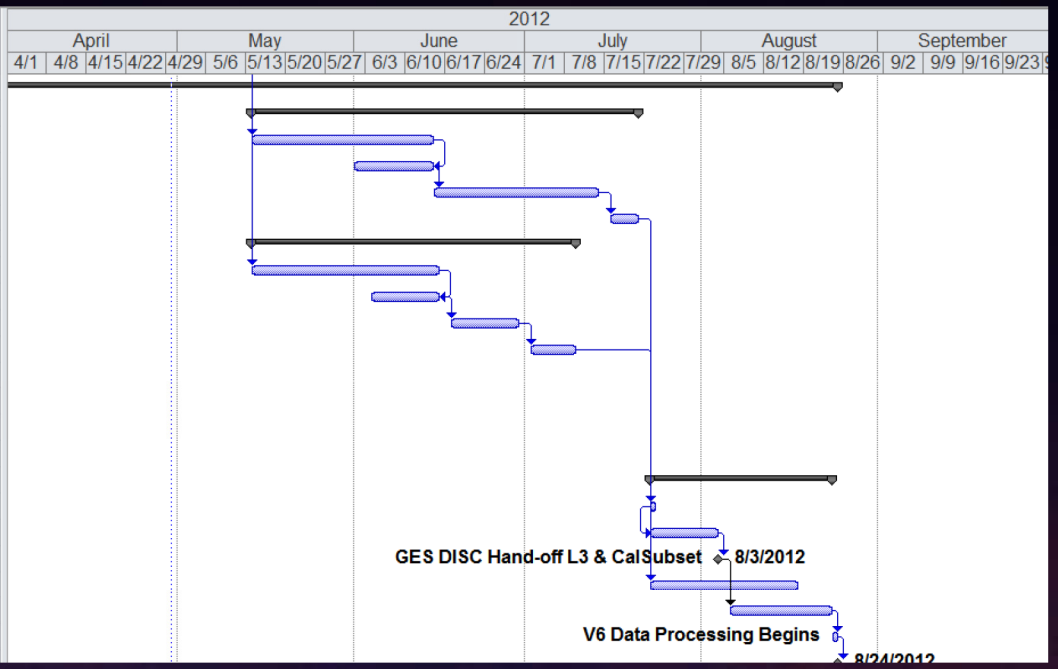
V6 Schedule - the "rest of the story"

	Task Name	Start	Finish
26	Remainder of V6 Items	Mon 9/27/10	Fri 8/24/12
27	**Level 3 Algorithm Development**	**Mon 5/14/12**	**Fri 7/20/12**
28	Intensive development	Mon 5/14/12	Thu 6/14/12
29	Basic Testing (beta)	Fri 6/1/12	Thu 6/14/12
30	Code Mods	Fri 6/15/12	Fri 7/13/12
31	Final Testing	Mon 7/16/12	Fri 7/20/12
32	**Calibration Subset Upgrade**	**Mon 5/14/12**	**Mon 7/9/12**
33	Intensive development	Mon 5/14/12	Fri 6/15/12
34	Basic Testing (beta)	Mon 6/4/12	Fri 6/15/12
35	Code Mods	Mon 6/18/12	Fri 6/29/12
36	Final Testing	Mon 7/2/12	Mon 7/9/12
37	**Level 1C**	**Mon 9/27/10**	**Thu 11/11/10**
38	Finalize Concept	Mon 9/27/10	Fri 10/1/10
39	Code Prototype	Mon 10/4/10	Thu 10/28/10
40	basic Testing (beta)	Fri 10/29/10	Thu 11/11/10
41	**Package and Deliver - L3 & CalSub**	**Mon 7/23/12**	**Thu 8/23/12**
42	Delivery Readiness Review	Mon 7/23/12	Mon 7/23/12
43	Build, Deliver, Checkout at GSFC	Mon 7/23/12	Fri 8/3/12
44	Hand-off to GES DISC	Fri 8/3/12	Fri 8/3/12
45	Documentation	Mon 7/23/12	Fri 8/17/12
46	GES DISC I&T	Mon 8/6/12	Thu 8/23/12
47	V6 Data Processing Begins	Fri 8/24/12	Fri 8/24/12
48	**Full V6 Product Support Begins**	**Fri 8/24/12**	**Fri 8/24/12**



- **End Development** **6/15/12**
- **End Test** **7/20/12**
- **Deliver** **7/23/12**
- **Hand-off to GES DISC** **8/3/12**
- **GES DISC I&T** **8/23/12**
- **Public Release** **8/24/12**